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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/306,110	05/06/1999	SATOSHI HASEGAWA	P/2850-19	3039

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04/13/2004

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EXAMINER

VAUGHAN, MICHAEL R

ART UNIT

PAPER NUMBER

2131

DATE MAILED: 04/13/2004

15

Please find below and/or attached an Office communication concerning this application or proceeding.

2

Office Action Summary

Application No.

09/306,110

Applicant(s)

HASEGAWA, SATOSHI

Examiner

Michael R Vaughan

Art Unit

2131

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

Claims 1-15 are pending.

Response to Argument

Applicant's arguments with respect to claims 1-14 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by Wiser et al, herein Wiser (USP 6,330,675).

As per claim 1, Wiser teaches:

calculation means for performing calculation using a variable on an original data stream read from a recording medium so as to produce a calculated data stream (column 2, lines 25-28);

variable creation means for creating the variable (column 4, lines 60-65);

a stream buffer (column 2, lines 24-25);

inverse calculation means for performing inverse calculation on the calculated data stream output from the stream buffer to reproduce the data stream (column 2, lines 29-34);

stream processing means (column 2, 55-57);

output means (column 2, 31-32).

As per claim 2, Wiser teaches the data streams is read from the recording medium corresponds to an amount of data which can be processed at a time (column 2, lines 20-21.

Claim Rejections - 35 USC § 103

Claims 3, 5-6, 8-10, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wiser in view of Becker (USP 4,157,454).

As per claims 3 and 10 Wiser does not explicitly teach that the variable is changed at an arbitrary timing. Wiser does teach that any encryption/decryption method may be used in his system (column 8, lines 50-51). Wiser teaches that encryption/decryption is performed on blocks of data independently. One of ordinary skill would know that frequent key changes strengthen the security of the system. Becker teaches that one can implement a programmable logic array, PLA, which is known in the art, to cause random changes in the enciphering keys (column 17, lines 51-56). In view of this, it would have been obvious to one of ordinary skill in the art at the time of the invention to employ the teachings of Becker within the system of Wiser because it would allow various keys to encrypt the temporary copy of the data. Wiser teaches that a shortened key is used in this process to make the calculation faster (column 4, lines 63-65), therefore it would have been obvious to one of ordinary skill in the art to change the key frequently to increase the effort needed an outsider to gain knowledge of the entire file.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wiser in view of Becker.

As per claim 5, Wiser teaches:

calculation means for performing calculation using a variable on an original data stream read from a recording medium so as to produce a calculated data stream (column 2, lines 25-28);

variable creation means for creating the variable (column 4, lines 60-65);

a stream buffer (column 2, lines 24-25);

inverse calculation means for performing inverse calculation on the calculated data stream output from the stream buffer to reproduce the data stream (column 2, lines 29-34);

stream processing means (column 2, 55-57);

output means (column 2, 31-32).

Wiser is silent in disclosing creating a number of variables. One of ordinary skill would know that using multiple keys and frequently changing them strengthens the security of the system. Becker teaches that one can implement a programmable logic array, PLA, which is known in the art, to cause random changes in the enciphering keys (column 17, lines 51-56). In view of this, it would have been obvious to one of ordinary skill in the art at the time of the invention to employ the teachings of Becker within the system of Wiser because it would allow various created keys to encrypt the temporary copy of the data. Wiser teaches that a shortened key is used in this process to make the calculation faster (column 4, lines 63-65), therefore it would have been obvious to one of ordinary skill in the art to change the key frequently to increase the effort needed an outsider to gain knowledge of the entire file.

As per claim 6, Wiser teaches the data streams is read from the recording medium corresponds to an amount of data which can be processed at a time (column 2, lines 20-21).

As per claim 8, Wiser teaches:

calculation means for performing calculation using a variable on an original data stream read from a recording medium so as to produce a calculated data stream (column 2, lines 25-28);

variable creation means for creating the variable (column 4, lines 60-65);

a stream buffer (column 2, lines 24-25);

inverse calculation means for performing inverse calculation on the calculated data stream output from the stream buffer to reproduce the data stream (column 2, lines 29-34);

stream processing means (column 2, 55-57);

output means (column 2, 31-32).

Wiser is silent in disclosing creating a set of variables. One of ordinary skill would know that using multiple keys and frequently changing them strengthens the security of the system. Becker teaches that one can implement a programmable logic array, PLA, which is known in the art, to cause random changes in the enciphering keys (column 17, lines 51-56). In view of this, it would have been obvious to one of ordinary skill in the art at the time of the invention to employ the teachings of Becker within the system of Wiser because it would allow various created keys to encrypt the temporary

copy of the data. Wiser teaches that a shortened key is used in this process to make the calculation faster (column 4, lines 63-65), therefore it would have been obvious to one of ordinary skill in the art to change the key frequently to increase the effort needed an outsider to gain knowledge of the entire file.

Wiser is silent in disclosing producing variable change codes representing the variable selected from the variable set. Wiser does teach that any encryption/decryption method may be used in his system (column 8, lines 50-51). Wiser teaches that encryption/decryption is performed on blocks of data independently. Becker teaches that modification modes (variable change codes) result in the changing of keys (variables) (column 2, lines 53-59). It is inherent that both the encryption device and decryption device must remain synchronized so that the correct key will be used to decrypt the data. In view of this, it would have been obvious to one of ordinary skill in the art at the time of the invention to employ the teachings of Becker within the system of Wiser because it is necessary to provide a way in which the decrypting device would know when to use a different key to decrypt data.

As per claim 9, Wiser is silent in disclosing a changing the variable after each cycle. Becker teaches changing the variable after each enciphering operation (cycle) (column 2, lines 53-55). Clearly, the motivation is to increase the overall security of the system. Changing the variable after each cycle greatly increases the work necessary to one trying to compromise the system. The more ways you encipher data, the more ways one has to decipher them. In view of this, it would have been obvious to one of

ordinary skill in the art at the time of the invention to employ the teachings of Becker within the system of Wiser because changing variables after each enciphering cycle to make the system more resistant to unauthorized deciphering.

As per claim 15, Wiser teaches:

calculation means for performing calculation using a variable on an original data stream read from a recording medium so as to produce a calculated data stream (column 2, lines 25-28);

variable creation means for creating the variable (column 4, lines 60-65);

a stream buffer (column 2, lines 24-25);

inverse calculation means for performing inverse calculation on the calculated data stream output from the stream buffer to reproduce the data stream (column 2, lines 29-34);

stream processing means (column 2, 55-57);

output means (column 2, 31-32).

Wiser is silent in disclosing creating a number of variables. One of ordinary skill would know that using multiple keys and frequently changing them strengthens the security of the system. Becker teaches that one can implement a programmable logic array, PLA, which is known in the art, to cause random changes in the enciphering keys (column 17, lines 51-56). In view of this, it would have been obvious to one of ordinary skill in the art at the time of the invention to employ the teachings of Becker within the system of Wiser because it would allow various created keys to encrypt the temporary

copy of the data. Wiser teaches that a shortened key is used in this process to make the calculation faster (column 4, lines 63-65), therefore it would have been obvious to one of ordinary skill in the art to change the key frequently to increase the effort needed an outsider to gain knowledge of the entire file.

Wiser is silent in disclosing producing variable change codes periodically. Wiser does teach that any encryption/decryption method may be used in his system (column 8, lines 50-51). Wiser teaches that encryption/decryption is performed on blocks of data independently. Becker teaches that modification modes (variable change codes) result in the changing of keys (variables) (column 2, lines 53-59). It is inherent that both the encryption device and decryption device must remain synchronized so that the correct key will be used to decrypt the data. In view of this, it would have been obvious to one of ordinary skill in the art at the time of the invention to employ the teachings of Becker within the system of Wiser because it is necessary to provide a way in which the decrypting device would know when to use a different key to decrypt data.

Wiser is silent in disclosing a changing the variable after each cycle. Becker teaches changing the variable after each enciphering operation (cycle) (column 2, lines 53-55). Clearly, the motivation is to increase the overall security of the system. Changing the variable after each cycle greatly increases the work necessary to one trying to compromise the system. The more ways you encipher data, the more ways one has to decipher them. In view of this, it would have been obvious to one of ordinary skill in the art at the time of the invention to employ the teachings of Becker within the

system of Wiser because changing variables after each enciphering cycle to make the system more resistant to unauthorized deciphering.

Claims 4, 7, 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wiser in view of Becker and in view of Mionet et al, herein Mionet (USP 5,920,627).

As per claims 4, 7, and 11-14, the examiner supplies the same rationale as recited in the rejection of claim 1 for the motivation to include the teachings of Becker within the system of Wiser. Wiser and Becker are silent in disclosing a message representing a variable change code. Mionet teaches that in order for the decrypting device to know when to use a new key, that the encryption device sends a message to the decrypting device indicating when a new key is to be used (column 9, line 65—column 10, lines 15). Mionet uses a message to indicate a key change instead of just sending the new key over the transmission means. If one were to send the new key encrypted with the old key and the old key had been comprised then the new key would also be compromised. It is inherently insecure to send a key in the clear. In view of this, it would have been obvious to one of ordinary skill in the art at the time of the invention to pass a variable change code from the calculator to the inverse calculator because it is more secure than sending the new key encrypted by the old key. In the

context of Wise, it is obvious that the code must travel from the calculator to the inverse calculator via the buffer because that is the only data path to connecting the two.

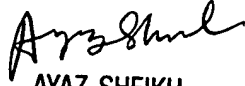
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael R Vaughan whose telephone number is 703-305-0354. The examiner can normally be reached on M-F 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on 703-305-9648. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

MV
Michael R Vaughan
Examiner
Art Unit 2131


AYAZ SHEIKH
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